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ABSTRACT

A review of problems inherent in enhancing written guides for teachers is presented, focusing on the impact of different conceptions of educational practice and teaching. The goal of this review is to formulate theoretical perspectives and practical precepts for authors and readers of guides for educational practice and teaching. Conceptions and assumptions regarding method, knowledge, and rules of action are discussed as background to an analysis of teaching as technology, art, and craft. Each conception is further examined to illustrate how it is likely to influence the form in which teaching practices are codified. Three perspectives which have been used in this endeavor are: (1) the nomothetic view of educational practice as a technology with laws, commonalities, and regularities; (2) the ideographic orientation, which treats educational practice as an art with unique and idiosyncratic aspects; and (3) teaching as a craft, in which established instructional guidelines are adapted by the practitioner. Implications and conclusions are drawn, and teaching as technology, art, and craft are compared and contrasted. (FG)

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Communication for Guiding Teachers: The Impact of Different Conceptions
of Teaching and Educational Practice

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of Teaching and Educational Practice

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Codification of educational visions, approaches, and strategies for the purpose of guiding teachers is a fundamentally important problem in preparing teachers generally (Dreeben, 1970, 1973; Lortie, 1975) and in implementing new curricula (Harris, 1981; Lighthall, 1973; Smith and Keith, 1971). Recently, Walker (1980) has highlighted the importance of communication for guiding teachers. He comments, however, "the amount written about the craft of writing curriculum documents is quite small, compared, say, with what has been written about the more specific art of stating behavioral objectives" (p. 73). Walker adds, "Here, perhaps, is an opportunity for professional improvement in the coming years" (*Ibid.*, p. 73). These comments by Walker, and others as well, suggest the need to formally address the range of problems inherent in the goal that a written text guide practice and to identify ways in which the potential of written communication as guides for practice can be enhanced.

In this paper, we explore one particularly important set of issues that affect the curriculum communication task: the impact of different conceptions of educational practice and teaching. Any practice, such as spelling, manufacturing automobiles, swimming, playing chess, writing poetry, designing buildings, and teaching, can be represented in a variety of ways, depending on conceptions of the pertinent practice and its appropriate rendering. Moreover, potential practitioners' responses to renderings of a practice will be influenced by their conceptions of the practice. In this paper, we will first use Buchler's (1961) conception of method, Oakeshott's (1962) conception of knowledge, and Scheffler's (1960) characterization of "rules" and action, to suggest distinctions among types and aspects of practices, which have implications for written codifications of practices. Then, we will characterize different views of education (nomothetic and idiographic) and aspects of teaching (Technology, Craft, and Art) which correspond with the distinctions among practices formulated by Buchler, Oakeshott, and Scheffler. We will illustrate how these

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different conceptions are likely to influence codifications of educational practice and suggest implications for authors and readers of curriculum documents intended to guide teachers.

What assumptions do we make about the intentions of authors and practitioners and the role of written communication in guiding practice? We envision communicators who aspire to render accessible to teachers the principles and strategies for educational programs. Yet, in principle, written communication can be only a starting point for improvement of practice and should be only one component of programs to improve educational practice (Harris, 1981). Moreover, teachers do not neutrally adopt recommended practices. Much recent analysis and research suggests that teachers' actual classroom behavior results from a complex process of decision-making (Clark and Yinger, 1977; Shavelson, 1976, 1981; Shulmann and Elstein, 1975) in which they adapt curriculum ideas and materials to address the unique aspects of their teaching situations (Connelly and Ben-Peretz, 1980; Olson, 1977, 1980; Reid, 1978; Sieber, 1974; Taylor, 1974). Therefore, we assume that the role of written communication for guiding teachers is to help teachers, who are so inclined, to begin to generate recommended practices, consistent with the opportunities and constraints in their teaching situations. Likewise, we envision teachers who wish to understand, in part through written codification, the principles and teaching strategies for educational programs, so they can begin to experiment with recommended approaches.

Given these assumptions about authors and practitioners, our purpose is not to prescribe any particular approaches to writing curriculum guides, but rather to formulate theoretical perspectives and practical precepts for use by authors and readers of guides for educational practice and teaching. Through our analyses, we will demonstrate that different conceptions of teaching and educational practice tend to be associated with: different forms of communication for guiding practice; different expectations of written communications for conveying reproducible understandings; and different expectations about the generalizability of recommended practices. The theoretical framework, analytical tools, and examples are intended to help authors of guiding communications select vehicles of expression--media, foci, and terms--appropriate to their conceptions of education, teaching, and the specific practices they seek to codify. The analysis should also help authors have more accurate expectations about the potential impact of their efforts. For example, the potential for conveying reproducible understandings is, in principle, greater when teaching

is viewed as a Technology than when it is viewed as an Art. The analysis is also expected to help teachers read guiding communications with greater acumen and understanding of implications for their practice.

Conceptions of Practice: Theoretical Framework

Any practice can be represented in a variety of ways, with respect to media, foci, and terms, depending on authors' conceptions concerning the pertinent practice and its rendering. Moreover, practitioner's responses to representations of a practice will be influenced by their conceptions of the practice. There are many frameworks for viewing practices and for studying conceptions of practices.

For example, investigators have identified and discussed prevalent, alternative orientations toward educational practice, based on analysis of educational literature. Eisner and Vallance (1974), for instance, identified five orientations toward the goals, content, and organization of curricula: (1) development of cognitive processes as a central goal; (2) curriculum as technology--a concern for locating efficient, reproducible means to accomplish pre-specified objectives; (3) self-actualization as a central goal; (4) social-reconstruction--preparation for life in society as a central goal; and (5) academic rationalism--access to the great ideas of Western culture through the established disciplines as a central goal. Joyce and Weil (1972) grouped the models of teaching they identified and characterized into four families representing different orientations toward human nature and purposes and toward appropriate goals and learning environments. Models derived from social interaction sources focus on individuals' relationships with others and their integration into society, through development of interpersonal and group process skills. Models derived from information processing sources focus on improving intellectual abilities. A third group of models focus on personal development. Models derived from behavior modification sources focus on creating efficient systems for sequencing learning activities and shaping behavior. Exponents of these alternative orientations invariably reflect their conceptions in their renderings of educational practice.

A growing body of literature reports empirical research, generally from a cognitive information processing approach, concerning teachers' conceptions about education and teaching (Clark and Yinger, 1977; Shavelson, 1981). More specifically, this research addresses the following general questions. What

factors do teachers consider in instructional planning (Peterson, Marx and Clark, 1978; Taylor, 1970; Yinger, 1977; Zahorik, 1975)? What factors do teachers take into account in making judgments about such issues in teaching as students (Marx, 1978; Shavelson, Cadwell and Izu, 1977), instructional moves (Shavelson, Cadwell and Izu, 1977), and effective teaching (Anderson, 1977)? What qualities characterize teachers' thinking and decision-making during interactive instruction (Clark and Joyce, 1975; Clark and Peterson, 1976; Marland, 1977; Marx and Peterson, 1975; Morine and Vallance, 1975)? What are teachers' perspectives (Janesick, 1977), implicit theories (NIE, 1975), or belief systems (Brophy and Good, 1974) about teaching and learning (Bussis, Chiltenden and Amarel, 1976; Duffy, 1977; Janesick, 1977; Marland, 1977)? The methods used to address these questions have ranged from obtaining teachers' self-reports through questionnaires, thinking-aloud techniques, and stimulated recall to ethnographic participant observation approaches. This body of research is still in its infancy. Further research in this area will undoubtedly yield valuable tools for improving codifications of educational practice and teaching, both through development of codified "practice theories" (i.e., theories derived from analysis of effective practice) and through development of approaches for analysis of teachers' responses to codifications of educational practice, based on their conceptions of teaching.

We have cited several types of frameworks for viewing teaching and educational practice and studying conceptions of teaching and educational practice: (1) alternative orientations toward educational practice, based on analysis of educational literature (Eisner and Vallance, 1974; Joyce and Weil, 1972), and (2) teachers' conceptions about education and teaching, derived through empirical research. In this paper, we will explore the implications of several philosophers' ruminations about practices, in general, for characterization and codification of educational practice and teaching. More specifically, we will use Buchler's (1961) conception of method, Oakeshott's (1962) conception of knowledge, and Scheffler's (1960) discussion of "rules" and action, to suggest distinctions among types and aspects of practices which have implications for written codifications of practices. We will focus our development of these distinctions through exploration of some philosophical assumptions associated with the possibility of guiding practice.

The possibility of guiding a practitioner--whether a manufacturer, a chess player, a swimmer, a poet, an architect, or a teacher--however the cri-

teria for improvement may be defined, depends on the assumptions: (1) that there is a measure of regularity and repeatability in human experience so that one can learn from others' experiences; and (2) that to introduce the novice to the ethos of an activity or to improve the practice of a person already initiated, it is necessary to convey the order or method, namely the repeatable elements in the practice, as distinguished from mere random events. Buchler (1961) contends that there is a "vast world of methodic possibility" (p. 20). But, he outlines important distinctions among methods. These distinctions, according to Buchler, "are not exhaustive, but their possible combinations help to explain the differences that prevail when we speak variously of the art of surgery, the art of writing fiction, the art of management, the art of building, or the art of swimming" (p. 33). Buchler contends:

Whoever is said to act methodically (1) chooses a mode of conduct (2) to be directed in a given way (3) to a particular set of circumstances (4) for the attainment of a result. . . . The mode of conduct adopted may consist in (1a) established practice, in (1b) established practice modified by idiosyncratic technique, or in (1c) essentially idiosyncratic, private practice. Whatever procedure is adopted, it may be utilized (2a) strictly and in accordance with prescription, or (2b) loosely, variably, . . . with a discretionary relationship to prescription, or (2c) uniquely in consequence of predominant reliance on insight. The circumstances under which the procedure is utilized may be (3a) definitely classifiable circumstances, or (3b) circumstances ranging from the expected and classified down to the minimal circumstances that would allow the procedure. And the result toward which the activity aims may be (4a) an envisaged or familiar type of result, or (4b) an indefinite result accepted as such in terms of desirability, or (4c) a relatively novel result (pp. 32-33).

Here, Buchler suggests that methods can be distinguished by the extent to which they constitute established practice, utilized strictly and in accord with prescription, in definitely classifiable circumstances, toward a familiar type of result.

The possibility of guiding a practitioner also depends on the assumption that the repeatable elements in human experience, i.e., the methods, are expressible, although not necessarily in written precepts. As Buchler (1961) argues, "To claim . . . that a particular method is not subject to articulation is virtually equivalent to claiming that the method does not exist" (p. 131). However, "A method is not always most intelligible in terms of direct, definite formulation" (*Ibid.*, p. 95). For example, "There are indirect as well as direct forms of articulation. . . . The method of a poet . . . is articulated by its own products and by other products that reflect

its influence" (p. 131).

Can we distinguish among practices and aspects of practices in terms that have implications for the extent to which they can be articulated in written precepts as contrasted with other forms of expression? Oakeshott's (1962) conception of knowledge does offer such a distinction. He argues that every activity involves two types of knowledge, "technical" and "practical". By definition, "technical knowledge" is susceptible of "precise formulation" while "practical knowledge" is not.

Every science, every art, every practical activity requiring skill of any sort, indeed every human activity whatsoever, involves knowledge . . . of two sorts, both of which are always involved in any actual activity. . . . The first sort of knowledge I will call technical knowledge. . . . In many activities, this technical knowledge is formulated into rules which are, or may be, deliberately learned, remembered, and, as we say, put into practice; but whether or not it is, or has been, precisely formulated, its chief characteristic is that it is susceptible of precise formulation. . . . The second sort of knowledge, I will call practical, because it exists only in use . . . it is a characteristic of practical knowledge that it is not susceptible of formulation of this kind (pp. 7-13).

If "practical knowledge" cannot be precisely codified, how can it be expressed and acquired? Oakeshott (1962) argues:

Its normal expression is in a customary or traditional way of doing things, or simply in practice . . . the only way to acquire it . . . (this type of knowledge) is by apprenticeship to a master - not because the master can teach it (he cannot), but because it can be acquired only by continuous contact with one who is perpetually practicing it. In the arts and in natural science what normally happens is that the pupil, in being taught and in learning technique from his master, discovers himself to have acquired . . . knowledge . . . without it ever having been precisely imparted and often without being able to say precisely what it is. Thus, a pianist acquires artistry as well as technique, a chess player acquires style and insight into the game as well as knowledge of the moves, and a scientist acquires (among other things) the sort of judgment which tells him when his technique is leading him astray and the connoisseurship which enables him to distinguish the profitable from the unprofitable directions to explore (p. 11).

The implications for guiding communications are clear. Only a part of the knowledge required for successful practice, i.e., "technical knowledge", is subject to written codification. "Practical knowledge", "know-how", artistry, insight, judgment, and connoisseurship are expressed only in the practice and learned only through experience with the practice. Practices will clearly vary in the extent to which they involve "technical" and "practical" knowledge in their conduct. A key factor in distinguishing among practices in terms of their poten-

tial for written codification is the extent of "technical knowledge" perceived as involved in using them and achieving successful results.

The possibility of guiding a practitioner also depends on the assumption that the practitioner's increasing understanding of a practice is associated with improvement in practice or hopefully success in the conduct of the practice and its consequences. Yet, it is clear that improvement in practice depends on factors that go beyond mere tentative understandings. These factors include: (1) practitioners' personal choices; (2) the relative proportion of "technical" and "practical" knowledge associated with the practice; (3) the extent to which competencies are readily developed or idiosyncratic talents; (4) the relative difficulty of developing suitable training programs; (5) the extent to which potential practitioners possess repertoires of relevant knowledge and competencies; and (6) the feasibility of implementing the practice in envisioned settings (Harris, 1981).

Can we distinguish among practices and aspects of practices in terms that have implications for the extent to which they can be articulated in precepts that will ensure success, if followed? Scheffler's (1960) characterization of "rules" and action does suggest such a distinction. He argues that the "rules" that can be formulated for an activity are either a "complete" set that guarantee success, if followed, or an "incomplete" set which cannot guarantee success. Rules for spelling, for example, are "complete". Scheffler (1960) observes:

consider a child trying to spell 'cat' correctly, in writing. We might, in this case, formulate helpful exhaustive rules as follows: 'First, (leaving a letter wide space to the left) write "C"; next, leaving no letter-wide space, write "A" to the right of "C", on the same line; next, leaving no letter-wide space, write "T" to the right of "A", on the same line' (leaving a letter-wide space to the right of 'T'). The child may not, in fact, follow these rules, but they are exhaustive relative to the activity and the context in question since no child who follows them fails in the attempt to spell 'cat' correctly in writing (p. 70).

By contrast, the rules for other practices are "incomplete" as illustrated by Scheffler (1960) in the following argument:

Rules for lion-hunting (we may imagine) tell hunters what they ought to do in trying to bag lions. Such rules cover the details of training, preparation, and the conduct of the hunt. . . . Let us assume that the hunter's knowledge and skills are excellent, that he interprets the rightness of conditions correctly, and that he follows this component set of rules . . . to the letter. It is still not guaranteed that some lion will be bagged; the lion may bound away at exactly the crucial moment. Rules to follow in trying to win games are, similarly, inexhaustive; one may follow all the rules of training and

playing and still end by losing the game. . . . It is always, to be sure, easy to formulate exhaustive rules that will not be helpful. To the lion-hunting rules already mentioned, we may, for example, add 'Kill the lion'. Anyone following the latter rule cannot fail to bag a lion, but it is ordinarily true that if he does not know how to bag a lion, neither does he know how to follow the rule. On the other hand, omitting this unhelpful rule has the effect of leaving the whole set inexhaustive (pp. 70-71).

Such "incomplete rules", according to Scheffler (1960), suggest how to conduct activities so as to avoid failure and maximize the likelihood of success, but do not assure success when the practitioner is confronted with the uncertainties and complexities of actual practice.

Through this exploration of some philosophical assumptions associated with the possibility of guiding practice, we have identified some distinctions among practices which have important implications for codifying practices and guiding practitioners. Practices vary in:

- (1) the extent to which they consist in established practice, as contrasted with idiosyncratic technique (Buchler, 1961);
- (2) the extent to which they are utilized strictly and in accord with prescription (Buchler, 1961);
- (3) the extent to which they are utilized in definitely classifiable circumstances (Buchler, 1961);
- (4) the extent to which they aim towards familiar types of results (Buchler, 1961);
- (5) the relative degree of "technical" and "practical" knowledge involved in their conduct (Oakeshott, 1962); and
- (6) whether or not they are susceptible to formulation in "complete" sets of "rules", precepts, or guidelines which would assure success, if followed (Scheffler, 1960).

These distinctions are not dichotomous, but rather like points on a continuum. Their combinations can be used to characterize generic views of practices.

Methods that can be classified under the combination of Buchler's distinctions (1a) [established practice], (2a) [utilized strictly and in accordance with prescription], (3a) [utilized in definitely classifiable circumstances], and (4a) [aimed toward an envisaged or familiar type of result], such as producing automobiles on assembly lines, will be labeled Technologies. In Oakeshott's (1962) terms, they require a substantial component of "technical knowledge", knowledge which is "susceptible of precise formulation" (1962, p. 13).

Moreover, in Scheffler's (1960) terms, these methods can be formulated in "complete" sets of "rules" that guarantee success, if followed. We should note that even these methods are not, in practice, subject to exhaustive articulation (although they can be formulated in precepts which are sufficient to assure reproducible understandings and success, if followed). A "complete" statement of written precepts for producing automobiles on an assembly line would be so cumbersome to produce as to defy common-sense or practical wisdom. Moreover, in spelling, for example, skill in applying rules is a "knack" that develops through practice.

Methods that can be classified under the combination of Buchler's distinctions (1c) [essentially idiosyncratic, private practice], (2c) [utilized uniquely in consequence of predominant reliance on insight], (3b) [utilized in circumstances ranging from the expected and classified down to the minimal circumstances that would allow the procedure], and (4c) [aimed toward a relatively novel result], such as writing poetry and conducting scientific enquiry, will be labeled Arts. In Oakeshott's (1962) terms, they require a substantial component of "practical" knowledge, utilized in the service of invention. These methods are "modes of exploration", as distinguished from Technologies which are modes of "regularization" or standardization (Buchler, 1961, p. 33). Principles can be formulated for the "technical" aspects of Arts, such as writing poetry and conducting scientific enquiry. However, the critical requirements for these practices defy precise codification, since their products are assessed by their originality and evidence of invention, rather than by their conformity to models.

Methods that can be classified under the combination of Buchler's distinctions (1b) [established practice modified by idiosyncratic technique], (2b) [utilized loosely, variably, with a discretionary relationship to prescription], (3b) [utilized in circumstances ranging from the expected and classified down to the minimal circumstances that would allow the procedure], and (4b) [aimed toward an indefinite result accepted as such in terms of desirability], such as cooking and carpentry, will be labeled Crafts. These methods require significant components of both "technical" knowledge, which is subject to precise codification, and "practical" knowledge, which "exists only in use . . . in a customary or traditional way of doing things" (Oakeshott, 1962, p. 13). More specifically, they require "know-how" or what Buchler (1961) labels "tactics" (p. 33) for adapting precepts to the variable characteristics of materials and

circumstances. In Scheffler's (1960) terms, the "rules" or guidelines which can be formulated for Crafts are "incomplete"; they suggest how to avoid failure and maximize the likelihood of success, but do not assure success. For example, the master chef can specify for the novice nearly the exact quantities of ingredients and the fundamental techniques for producing a soufflé and warn against possible pitfalls. However, the master chef can neither envision nor prescribe for every difficulty that might confront the novice cook. The novice who intends to master a soufflé must develop "practical knowledge" of ingredients and techniques which is expressed and learned only through observation or personal experimentation.

These different views of practices--as Technologies, Crafts, and Arts--are not intended as clearly separate entities, but rather as heuristic devices for exploring the implications of distinctions among practices for their codification. Moreover, any practice, such as scientific enquiry, may be comprised of different aspects, which may be viewed variously as Technologies, Crafts, and Arts. The practices which are the focus of our concern are teaching and education. We will characterize different views of teaching (Technology, Craft, and Art) and education (nomothetic and idiographic) which correspond with the generic views of practice which we have characterized and illustrate how these different views are likely to influence codifications of educational practice and efforts to guide educators.

Conceptions of Teaching and Educational Practice

There is some consensus that teaching is a "practical art", improvable by "rules" that do not guarantee success (Dreeben, 1970; Lortie, 1975; Scheffler, 1960). As Scheffler (1960) comments:

If we turn now to the case of teaching it appears that it is more analogous to lion-hunting than to spelling, with respect to rules. No rules designed to improve the likelihood of success are both exhaustive and helpful to the would-be teacher, at least so far as we can tell. Rules of teaching may at best improve teaching, in the sense of rendering it more effective; they cannot exhaustively rule out failure. We may, if we like, call teaching a 'practical art' in that it is, speaking broadly, aimed at a goal that defines success, and improvable by rules that do not, however, guarantee success (p. 72).

Green (1972) extends this argument to decry the periodic search in education for panaceas and technical solutions to problems. He argues:

What I want to suggest is that the eternal search of people in education has been to find amidst all the efforts of hunting some unerringly suc-

cessful way of bagging a deer; or some absolutely unbelievably accurate way of finding a needle in a haystack; and, of course, in principle that's not feasible. Don't misunderstand, I am not suggesting that there are not many hints, models, paradigms, and examples that we can study, develop, etc. . . . But - well, this is what Plato found after he visited Syracuse; he discovered that Utopia doesn't exist and, in the real world, you've got problems. There isn't really any unerring method of bagging a deer. Yet, I can't think of another social enterprise unless maybe it would be in religion, within which enthusiasms . . . arise more often and sweep us along in a certain direction until we find out once more that there is no unerring method of bagging a deer (p. 14).

Much recent dialogue and research support the view that teaching is a complex task, fraught with endemic uncertainty. In discussions of teaching, investigators usually refer to two major facets: (1) instruction--the interaction of teachers and students with the subject-matter or skills that constitute the curriculum and (2) management--the ecology of the classroom or learning environment (Nuthall and Snook, 1973). Teachers confront unpredictability in both aspects of their work.

Instruction, per se, aside from the difficulties associated with enacting any particular curriculum, is characterized by uncertainty. As MacDonald and Clark (1973) comment, "Curriculum products, in terms of goals, materials and suggested treatments, are placed into instructional settings which . . . have a myriad number of variables which are either unknown or unpredictable during the developmental process" (p. 406).

Classroom ecology, and its associated requirement of management, adds another dimension of uncertainty to teaching. Management, conceived broadly, involves concern for social-psychological processes and considerations related to the classroom as a social institution within the context of the school and community. Viewed more narrowly, management relates to "keeping order". Teachers devote a substantial proportion of their time to management activities (Gump, 1967); and these activities contribute significantly to the unpredictable nature of teaching. Smith and Geoffrey (1968) argue that teachers must make and enforce rules, for the purpose of getting work done, in a way that avoids crises in authority. In laying down and enforcing the "rules of the game", teachers must decipher a complex course of social-psychological events and be prepared to respond to unexpected situations. Jackson (1966, 1968) similarly argues that classroom ecology engenders problems of maintaining order and of keeping students interested and actively involved in learning. In addressing these problems, teachers must react to a rapid flux of often unpre-

dictable events.

Nevertheless, there are distinct and prevalent views of education and teaching, each of which addresses their complexity in different ways. Educational practice has been studied and described from both a nomothetic perspective, in terms of a search for laws, commonalities, and regularities, and an idiographic perspective, in terms of the unique characteristics of educational situations (Von Wright, 1971). Similarly, there are distinct conceptions concerning the nature of teaching, which correspond to the genres of practice implied in Buchler's (1961) conception of method. Some educators tend to view teaching as potentially a Technology. They believe that in principle, efficient, codifiable, replicable means can be designed to achieve specified educational outcomes (e.g., Baker, 1973; Bereiter and Engelmann, 1966; Resnick, 1972a, b). This view of teaching is akin to the nomothetic conception of educational practice. Other educators tend to view teaching as an Art. They believe that, in principle, effective teaching is characterized by the demonstration of attitudes, relationships, and competencies that are essentially idiosyncratic in nature and difficult, if not impossible, to define in any precise manner (e.g., Denison, 1969). This view of teaching is akin to the idiographic conception of educational practice. The majority of educators tend to view teaching as a Craft in which teachers must inventively adapt general precepts to each teaching situation.

These different conceptions of education and teaching tend to be associated with: different forms of communication for guiding practice; different expectations of written communications for conveying reproducible understandings; and different expectations about the generalizability of recommended practices. We will further characterize each of the conceptions just cited and present examples to illustrate how they are likely to influence the form in which teaching practices are codified.

A Nomothetic View of Educational Practice and Teaching as a Technology

The search for controlling laws and replicable instructional designs, a reflection of the nomothetic perspective, has been a prevalent theme in the study and description of educational practice. Exponents of a "technological" theme believe that, in principle, efficient, replicable means can be designed to achieve specified educational goals, typically based on the methods and findings of the social and behavioral sciences. Eisner (1976) cites the work

of certain educational psychologists and exponents of scientific management procedures as exemplars of this view. He observes:

since the early work of Edward L. Thorndike, there has been a strong aspiration among psychologists to create a science of education that would provide educational practitioners with . . . knowledge . . . to control the processes and consequences of schooling. The search for educational laws, . . . was the object of the educational scientist's dream. This yearning . . . was, of course, reflected in the desire to make schools more efficient and presumably more effective. . . . This aspiration to discover the laws of learning was allied with the efficiency movement in education that sought to install scientific management procedures in schools through time and motion study of teaching practice (pp. 1-2)!

Recently, the proponents of behaviorally-stated objectives, of competency based education, and of accountability in education have assumed, in principle, the possibility of identifying efficient and replicable means to achieve identifiable and measurable outcomes. They view teaching and curriculum development as potentially a technology, namely "the production of replicable materials through relatively codified means" (Baker, 1973, p. 249). Although teachers do confront unpredictable events, in principle, well-established principles and strategies can potentially be specified for teachers to reach specified outcomes (Glaser, 1963; Lessinger, 1969; Mager, 1962; Popham, 1969).

How do educators reflect nomothetic views of education and technological views of teaching in their discussions, descriptions, and codifications of curricula for guiding teachers? The nomothetic/technological view will be illustrated through analyses of Resnick's discussions and descriptive characterizations of "open" classrooms (1972a, b) and Bereiter and Engelmann's prescriptions for 'teaching disadvantaged children in the preschool' (1966).

In a provocative article concerning the role of technology in open education, Resnick (1972a) exemplifies the "technological" orientation toward an educational practice, in this instance the set of related conceptions and practices collectively referred to as "open education". Resnick specifies "learner-control", i.e., "self-determination with respect to what is learned, when it is learned and how", as the defining criterion and central goal of open education (p. 70). She contends, "For educational technology, the challenge is to apply technological discipline to the problem of developing viable learner controlled instructional systems" (*Ibid.*). Resnick clearly believes that educational technology, defined as "the systematic application of the methods and findings of behavioral and social sciences" can be used to design educational

systems, defined as "inter-related resources and events" to achieve the central goal of open education, "learner control of the instructional process" (Ibid.). This set of beliefs is, for us, the defining criterion of a "technological" orientation towards educational practice. In the remainder of the article, Resnick discusses the implications of learner control for six different aspects of educational "systems"; "(1) the choice and definition of educational objectives; (2) the organization and sequencing of objectives, that is, the design of curricula; (3) the problem of displaying educational alternatives to the learner; (4) the provision of learner control within a given instructional episode; (5) learner control of motivation; and (6) evaluation of competence" (Ibid.).

Resnick's orientation is reflected in her vehicles of expression and her foci of discussion. In her discussion of the implications of the concept of learner control for "open education", she relies heavily on terms from systems design, technology, measurement, and behavioral psychology and focuses on implications for the major elements of an "instructional systems" approach to education. For example, the first challenge for technology is to broaden the "range of objectives to which serious educational efforts are devoted" to include "the domains of affective, artistic or social development" and "generative" learning skills for students to "program their own acquisition sequences" (p. 71). Other tasks for technology are: to develop brief, relatively independent "modular" units of instruction so that "learners" can control their "learning sequences" through "flexible curricula with many points of entry, many methods of instruction, and as many options as possible among objectives" (p. 72); to provide for "adequate display of the alternatives and development of systems for guiding the learner among them" to "find those components that should be considered for inclusion in his educational program" to "maximize his likelihood of meeting his own goals" (Ibid.); to provide opportunities in particular instructional interactions to "sequence the material", "prompt himself", and "diagnose his moment-to-moment successes and difficulties" (Ibid.); to sustain learners' motivation by developing "self-administered reinforcement supports" (Ibid.); and to develop "measures of competence that let the learner himself find out how he is doing - whether or not he is making progress toward his own objectives" and "measures of prerequisite learning . . . that can help a student decide which specific objectives he may need to study to meet his educational goals" (p. 75).

Resnick's "technological" orientation is also reflected in the methodology of her observational study of "open classrooms" and the form of descriptive characterizations of "open classrooms" which resulted from that study (1972b). Exponents of an ideographic view of education and a view of teaching as an Art have tended to use ethnographic approaches to classroom observation; they immerse themselves in the flux of classroom activities and attempt to discern and inventively describe the pervasive meanings they see evidenced in those activities (Smith and Geoffrey, 1968; Smith and Keith, 1971; Eisner, 1979). By contrast, Resnick focused her observations with a coding schedule which pre-specified certain verbal interactions for special attention. It included designations such as: Q_{mps} = Question from teacher to one or more child; Wh = Teacher asks the child what he is going to do; D_{mps} = A direction to the child to do something or work on a particular task. Resnick characterized "open classrooms" by the relative frequency of the pre-specified interactions. For example, she asserted, "the most striking feature of open classrooms is the predominance of questions from the teacher to the child" (p. 80). Thus, Resnick uses the categorized summary as her descriptive medium. She focuses on observable teacher and student behaviors, particularly verbal interactions. She uses literal, conventional terms in her coding schedule and also as the mainstay of her descriptive characterization. Resnick's choices of medium, foci, and terms are characteristic of those who espouse a nomothetic orientation toward educational activity which assumes the possibility and the value of: (1) eliciting laws, regularities, and commonalities; (2) developing replicable instructional designs; and (3) measuring specified outcomes. This type of description runs in sharp contrast to the bulk of descriptive discourse about "open education" which reflects an ideographic view of educational practice and contains figurative language, vivid imagery, and rhetorical devices, designed to evoke the mood and atmosphere of "open" schools (e.g., Silberman, 1973; Weber, 1971).

Bereiter and Engelmann also reflect a nomothetic view of education and a technological view of teaching in their prescriptions for instruction outlined in Teaching Disadvantaged Children in the Preschool (1966). They assume that it is desirable and possible to delineate specific means for assuring that children will achieve important, specified learning outcomes. Their book is intended as a guide to help teachers implement a program of "direct instruction" for disadvantaged children. Therefore, they outline 15 learning outcomes for preschool children, involving the use of language to express logical relation-

ships, which they believe will prepare 'disadvantaged' children for success in school. Examples of these minimum goals are:

1. Ability to use both affirmative and not statements in reply to the question 'What is this?' 'This is a ball. This is not a book.'
2. Ability to use both affirmative and not statements in response to the command 'Tell me about this ____ [ball, pencil, etc.]'.
15. A sight reading vocabulary of at least four words in addition to proper names, with evidence that the printed word has the same meaning for them as the corresponding spoken word. 'What word is this?' 'Cat.' 'Is this a thing that goes "Woof-woof"?' 'No, it goes "Meow"' (p. 48-49).

Bereiter and Engelmann (1966) write a "cookbook" (p. 104) to which they urge teachers to adhere, at least in their initial efforts with helping students achieve the specified minimum goals. They do not claim that there is only one method for reaching these goals, but they do firmly believe that the methods they codify for teachers will, if followed, lead to students' achievement of the outcomes. Moreover, they believe that "a reasonably intelligent, open-minded, and determined teacher" can learn the necessary teaching skills (p. 104).

They argue:

There is no intention to rob teachers of their individuality. . . . We expect a physician to be an individual, but we do not expect the kind of medicine he prescribes or the size of the incision he makes to vary with his mood. Teaching new concepts to naive children is often as delicate a task as making an incision. . . . This is not to say that there is only one way to present a concept, any more than there is only one way to perform a surgical operation. But it takes a very sophisticated practitioner to know which variations are optional and which are dangerous.

Because we cannot present all possible ways of teaching concepts effectively, and because for a teacher who is new to intensive academic teaching in the preschool it is difficult enough merely to learn one effective way of performing the variety of tasks that face her, this chapter and the ones following are written in a straightforward 'how-to-do-it' manner. It is hoped that the teacher will study and use these chapters as she would a detailed cookbook, recognizing that it is possible to be a very good cook without being an expert in the science of cookery, but that when one is not a thorough master of the science of cookery, it is necessary to stay close to the recipes if one is to avoid failures (p. 104).

Bereiter and Engelman's recipes consist of outlines of specific teaching strategies designed to assure that students will achieve each of the 15 minimum goals. For example, they specify the following teaching strategy for helping students achieve the first minimum program goal [Ability to use both affirmative and not statements in reply to the question 'What is this?' 'This is a

a ball. This is not a book.']

The identity statement form is the most rudimentary in the language hierarchy. 'This is an alligator.' 'This is a 3.' 'This is a word.' The identity statement is the starting point for the language program. It defines the relationship between language and the child's awareness of the physical world. It tells him that the statement for the familiar act of pointing at the block is 'This is a block'.

The following procedure is recommended for presenting the identity statement form:

1. Adopt a stereotyped procedure.
 - a. Present an object and give the identity statement. 'This is a ball.'
 - b. Follow the statement with a yes-no question. 'Is this a ball?'
 - c. Answer the question. 'Yes, this is a ball.'
 - d. Repeat the question and encourage the children to answer it.
 - e. Introduce what questions after the children have begun to respond adequately to yes-no questions.
2. Make up identity statements about those objects you will be talking about in the preschool: boy, girl, piano. . . .
3. Strive for clear pronunciation, but not so insistently that pronunciation becomes the foremost consideration. . . . Repeat the statement five to ten times. . . .
4. Introduce tasks that dramatize the equivalence between the identity statement and the act of pointing at the appropriate object. Present four objects, perhaps a ball, block, cup, and pencil. Have the children point to the appropriate objects as you make the statements. 'This is a ball', etc. Then point and ask the children to produce the statements in answer to 'This is a what?'
5. Do not work on identity statements for more than three or four minutes. Make these statements a part of the daily language routine, perhaps at the beginning of the language period.
6. After the children have become reasonably familiar with the presentation that begins with a given identity statement (This is a ball) and then introduces questions, change the order of presentation so that it opens with a question. 'This is a what?' After the answer has been produced, have the children repeat it several times in unison (pp. 139-140).

Thus, Bereiter and Engelmann delineate specific straightforward, cookbook-type guidelines for teachers to help 'disadvantaged' children achieve pre-specified minimum goals.

Some exponents of a technological view of teaching have gone so far as to attempt to meet the criterion of reproducibility required for systematic program development by scripting teachers' discourse. Baker (1973) notes that the Sullivan reading program provides teachers with a script from which they are instructed not to depart. She comments:

Systematic development, with its procedures for design and repeated testing, implies that the resultant product will perform with some

expected degree of reliability. The product performs when aspects of its design measurably contribute to learner performance. Reliability requires that the materials or procedures be implemented as intended. One of the most critical points in product specification is maximizing the likelihood that the product will have replicable effects. . . . the most direct way to assure replicability is to incorporate all critical stimuli, and provisions for responses to them, in materials provided directly to the learner. . . . The live teacher is, in some cases, auxiliary to the main thrust of the program. An alternative, employed in some development, is to 'program' the teacher's behavior to meet the criterion of reproducible events (Buchanan, 1963) by providing scripts from which the teacher is directed not to depart (p. 260).

Does scripting teachers' discourse assure replication of educational programs? The basic problem of communication for guiding educators is to convey the principles and pedagogical structure for an educational plan so that teachers could, among other things, generate discourse appropriate to the plan. What if the problem of generativity could, in principle, be eliminated by scripting discourse for teachers? Could scripting eliminate differences of interpretation in communications for guiding practitioners? Consider the situation of an actor who begins with a script which contains discourse and provides instructions for setting the mood and the scene. Yet, every rendering of the script is somewhat different. These differences result, in part, from actors' skills and from differences in their responses to audeicnes. In addition, the idiosyncratic understandings and experience of each actor strongly affects his or her interpretations and rendering of the script. The script can convey only a part of the playwright's intentions. The problem remains of conveying a "feeling" for an appropriate rendering of the script.

An Ideographic View of Educational Practice and Teaching as an Art

A concern for studying and characterizing the idiosyncratic, evanescent aspects of educational practice has been a persistent countervailing theme within educational thought to the "technological-scientific" quest for controlling laws, replicable instructional design, and precise descriptive terminology. Many investigators assume that educational practice is a complex set of activities encompassing the full range of human experience which cannot be fully understood in terms of generalizations, or controlled through replicable designs, or adequately codified in precise consensual languages (Easley, 1973; Eisner, 1972, 1975, 1976, 1979; Huebner, 1966; Kelly, 1975; MacDonald, 1965, 1971; Mann, 1969; McCutcheon, 1976; Shulman, 1970; Stufflebeam, 1967; Vallance,

1975, 1976; Westbury, 1970).

Many of these same investigators have suggested that an "aesthetic" orientation toward educational practice can be a valuable supplement to the prevailing "technological-scientific" orientation; and propose that certain tools of aesthetic criticism can be productively employed to study and codify educational activities so as to capture their complex meanings and evanescent qualities, for practitioners and others (e.g., Eisner, 1972, 1975, 1976, 1979; Huebner, 1966; Kelly, 1975; McCutcheon, 1976; Vallance, 1975, 1976; Westbury, 1970). Eisner (1975), for example, contends that "works of art . . . are aimed at forms of presentation and disclosure that are incapable of linguistic translation" (pp. 5-7). How, then, can the critic share experience of the work of art with an audience? Eisner (1976) comments, "the critic strives . . . to articulate or render those ineffable qualities constituting art in a language that makes them vivid. The task of the critic is to adumbrate, suggest, imply, connote, render, rather than to translate. In this task, metaphor and analogy, suggestion and implication are major tools" (p. 9). These communication techniques are labeled as descriptive portrayal. Eisner (1975) contends that educational practice can be viewed as works of art, subject to study and codification in their uniqueness by these techniques of descriptive portrayal. He comments:

A strictly behavioral description . . . is not likely to capture the meaning or character of teaching. . . . Such a description is 'thin' and can be contrasted to what Geertz refers to as 'thick' description. Thick description aims at describing the meaning or significance of behavior as it occurs in a cultural network saturated with meaning (pp. 13-14).

Similarly, some practitioners and investigators view teaching as an Art, somewhat akin to writing poetry. For these educators, among whom are many of the so-called "radicals" or "romantics", it is in principle, not possible or desirable to develop and specify strategies for attaining specified educational outcomes. Rather, effective teaching is characterized by attitudes, relationships, and competencies that are essentially idiosyncratic in nature and difficult, if not impossible, to define in any precise manner.

How do educators reflect ideographic views of education and a view of teaching as an Art in their discussions, descriptions, and codifications of curricula for guiding teachers? These views will be illustrated through Denison's (1969) discussion of teaching experiences at the "First Street School" and Weber's (1971) descriptions of an "open" classroom.

In The Lives of Children, Denison (1969) describes his experiences with teaching 'disadvantaged' children at the "First Street School" and discusses the educational philosophy of himself and his colleagues. Throughout this book, he powerfully expresses the ideographic view of education and the view of teaching as an Art.

Denison believes that it is in principle, not possible or desirable to codify specific teaching strategies for achieving specified learning outcomes. He argues that the most important kind of learning, the learning that evokes changes in individual lives, can occur only in an "environment for growth" (p. 4), which is characterized by students being "free from compulsion that is in violation of their proper needs" and "reality of encounter among teachers and children" (Ibid.). The means for creating such an environment cannot, however, be defined in any precise way. Denison (1969) describes the teacher as an artist engaged in inventing strategies for achieving emerging educational goals.

Technique cannot be taught, though it can be learned. The reason is simple: each appearance of technique, each application, each solution is unique. The work of the teacher is like that of the artist; it is a shaping of something that is given, and no serious artist will say in advance that he knows what will be given. . . .

. . . We cannot repeat past successes with past techniques. We cannot organize the educational event in advance. Certainly we can plan and prepare, but we cannot organize it until we are in it and the students themselves have brought their unique contributions (pp. 257-258).

How, then, does Denison convey a conception of education based on "freedom" and "reality of encounter" among students and teachers? He uses examples and persuasive descriptions of teaching and learning experiences to illustrate his concepts and his terms. "Freedom," Denison admits, "is an abstract and terribly elusive word. I hope that a context of examples will make its meaning clear" (Ibid., p. 4). He adds, "If I can prove nothing at all in a scientific sense, there is still a power of persuasion in the events themselves, and I can certainly hope that our experience will arouse an experimental interest in other parents and teachers" (Ibid., p. 5).

Denison (1969) conveys his conception of "freedom" and "reality of encounter" among students and teachers through numerous examples, such as the following.

Here are two little incidents that occurred at school. They are typical of the thousands which supported the development of self-respect, confidence, trust, and regard for other persons. The same events, by the same token, diminished shame, embarrassment, self-contempt, hostility, and

distrust of others. As a by-product of all this, the barrier was lifted which had formerly clouded the children's experience of all things, including studies.

Rudella, the Negro girl of nine, took offense at some harsh words that were addressed to her in Susan's class. Because of her shyness, she found it difficult to speak up for herself; but she was not, on that account, forced to sulk and swallow her pride. She put on her coat and announced that she was "leavin' this place." She said that she wasn't coming back, meaning forever, but implying *all day*. And so she departed, enjoying an exit every bit as good as a Triumphant Entrance. She went to the candy store on the corner and bought herself a chocolate soda. One might well imagine that as the soda dwindled, forever dwindled to a day; and that when the soda vanished, the day seemed very long. Perhaps she reflected that she had departed triumphantly and with great dignity, and that her classmates were well aware of her pride. In any event she suddenly appeared in the doorway of the classroom, taking off her coat, angrily warning her teacher that that sorry event had better not happen again. Her teacher smiled, and one of her classmates said vivaciously, "Here's Rudella!" (p. 84).

Thus, Denison believes the function of a guiding communication is to convert its readers to the efficacy of a conception of education through persuasive descriptions of events. The terms used to define an educative environment are, by necessity, elusive and conveyed through examples that serve only as a starting point from which individual teachers can haltingly experiment with implementing an ethos to which they have been converted. The resulting actualization of Denison's conceptions cannot, in principle, meet the reproducibility requirement that the "technologists" set for curricula.

Advocates of the set of theories and practices labeled "open education", such as Weber (1971), tend to view the idiosyncratic, evanescent aspects of educational practice as particularly important. Thus, it is not surprising that they frequently use techniques of "descriptive portrayal" to convey their conceptions of "open education" in descriptions and guides for practice. Weber (1971) describes:

an old stone building, a wall, a bare playground, but with large tubs for painting. Inside, suddenly all is light, movement, color. The first impression is of lovely things on the eye level of five-year-olds, in corners that invite use and lingering- . . . a total pattern of beauty - all for seeing and touching and arranging. . . . There are precious things, lovely things, colorful things . . . all laid out for children to see, to handle, to use. In fact, in all the corners all the objects seem to be set out with confidence that the children will handle beautiful things carefully and with respect. And also on view are things the children themselves have made.

An environment bursting with invitation, bursting with all the things children are producing right then and there. . . .

The classroom does not contain the class. The children spill all

over in little groups in various areas of the room and hall. Their teacher is not behind a desk but moving to all the children. The headmistress is in the midst of it all, too, knowing everyone, helping wherever needed. Talk is going on all the time. Words for activities are being sought all the time. The children seem to know just what they want to do, where to get material, how to go about it. The children move with self-assurance, using their school (pp. 62-63).

Weber's evocative description of an open classroom illustrates choices of vehicles of expression which reflect an ideographic orientation towards educational practice. She encodes her perceptions of an "open" classroom in the medium of an evocative narrative account. She focuses on the mood and atmosphere of the school. Her description is replete with figurative language, vivid imagery, and rhetorical devices, such as contrast, redundancy, and hyperbole, designed to capture her responses to the mood and atmosphere she observed. She seeks to capture the idiosyncratic characteristics of this classroom.

Teaching as a Craft

The majority of educators tend to view teaching as a Craft, somewhat akin to carpentry. Teachers must adapt general instructional guidelines, designed to achieve emerging outcomes, to the variable characteristics of their teaching situations. This view of teaching is a fundamental tenet associated with recent research on teachers' thinking, cited earlier (e.g., Clark and Yinger, 1977; Shavelson, 1971) and recent discussions of teachers' implementation of educational materials and programs (Connelly and Ben-Peretz, 1980; Olson, 1977, 1980; Reid, 1978; Sieber, 1974; Taylor, 1974). These investigators suggest that teachers' actual classroom practices result from a complex process of decision-making in which they adapt curriculum ideas and materials to address the unique aspects of their teaching situations.

Those educators who view teaching as a Craft would tend to agree with Scheffler (1960) when he refers to "teaching as a 'practical art' in that it is, speaking broadly, aimed at a goal that defines success, and improvable by rules that do not, however, guarantee success" (p. 72). Thus, principles and methods can be specified for reaching codified outcomes. However, learning outcomes cannot be precisely specified, since their exact form will depend on each student's potential, a potential which can be estimated but not precisely predicted. Moreover, teachers must adapt methods to the idiosyncratic aspects of their teaching situations.

There is a fine line between the view of teaching as a Technology and teach-

ing as a Craft. In fact, programs that view teaching as a Technology might urge teachers to utilize structured learning packages to individualize instruction by matching students and appropriate learning packages; in such cases, teachers are diagnosticians, utilizing technological tools in the service of individualizing instruction (Baker, 1973). Conversely, exponents of programs that view teaching as a Craft might urge teachers to master technologies as a repertoire for approaching the idiosyncratic situations they will confront (Stone and Taylor, 1970).

Operationally, these two conceptions of teaching may appear to be similar but, there are important, albeit subtle differences between these two conceptions. When teaching is viewed as a Technology, specified methods can, in principle, yield predictable outcomes. The methods may as yet be undiscovered, but the search for such methods is appropriate. When teaching is viewed as a Craft, the search for sufficient methods is not appropriate; technologies are valuable, but teachers inevitably require exercise of what Buchler labels the "tactic faculty" for coping under increasingly diverse circumstances.

How do educators reflect the view of teaching as a Craft in their discussions and codifications of curricula for guiding teachers? The Communication Arts Program II, developed at the Southwestern Cooperative Educational Laboratory (SWCEL) illustrates this view particularly well in their program guides and teaching materials. The authors assume that well-established principles and approaches, in this case the principles of what they label "open-education" or "experience-centered" education, will enhance students' cognitive and affective growth. They further assume that the intelligent teacher can systematically learn to implement the principles and methods of open-education, if these principles are conveyed in concrete form (Cottingham and Stone, 1973). The guides for potential teachers reflect these conceptions of teaching. For instance, in one teacher trainers' guide (Cottingham and Stone, 1973), authors list major premises of "experience-centered" education, for example, "1. Children's interests and needs form the basis for learning." Under each premise, they list some teacher behaviors that would reflect the premise, for example, "allowing children access to an increasing number of interest centers", and "use of individualized contracts rather than group-directed seatwork" (p. 5). A five-phase training program is designed to help teachers systematically adopt such specified behaviors (Ibid.).

Teachers are encouraged to select and formulate goals and objectives to

guide their instruction. Stone and Cottingham (1973) argue, "Goals and objectives provide purpose and direction for classroom activities. The reference point provided by goals and objectives helps both teachers and pupils to decide on what is important or appropriate in the classroom" (p. 72). However, they also encourage teachers to modify their goals, based on their teaching situations. They comment, "a teacher in the experience-centered classroom is not committed to any particular curriculum or . . . objectives. She must choose for herself what she thinks is important. She must then modify her curriculum through experience with her children" (*Ibid.*, p. 73). The SWCEL materials are designed to help teachers select appropriate goals and learning experiences. They include: a list of principles and generalizations that children in primary grades should understand; a cross-referenced index of topics and themes considered as appropriate instructional content; and a suggested list of learning experiences (Stone and Taylor, 1970). According to the authors, it is important for all children to learn the principles outlined in the curriculum materials, but principles are best learned in the context of children's interests. The teacher may capitalize on a child's spontaneous self-selected interest; or a teacher may contrive an experience designed to elicit a child's interest. In either case, the teacher must attend to the idiosyncratic interests of each child (*Ibid.*, 1970).

Clearly, the authors of the SWCEL curriculum view teaching as a Craft in the sense that established methods can be utilized to attain specified ends. But, such methods must be adapted to the unique qualities of children and situations.

Implications and Conclusions

What are the implications of these discussions for authors and readers of communications, for guiding teachers? We will now draw together the threads of this paper in order to formulate implications of different conceptions of education and teaching for: codification for guiding practitioners; expectations for conveying reproducible understandings; and expectations of widespread generalizability of recommended practices.

We began by identifying distinctions among types and aspects of practices, in general, which have implications for codification of practices and guiding practitioners. Practices vary in the extent to which they: (1) consist in established practice, as contrasted with idiosyncratic technique; (2) are util-

ized strictly and in accord with prescription; (3) are utilized in definitely classifiable circumstances; and (4) aim towards familiar types of results (Buchler, 1961). Practices also vary in the relative degree of "technical" and "practical" knowledge involved in their conduct (Oakeshott, 1962) and in whether they can be codified in "complete" sets of "rules" or guidelines which would assure success, if followed (Scheffler, 1960). The combinations of these distinctions were then used to characterize different views of practices--as Technologies, as Arts, and as Crafts. We then characterized different views of education (nomothetic and ideographic) and teaching (Technology, Art, and Craft) which correspond with the different views of practice which we characterized; and illustrated, in some exemplar cases, how these different views are likely to influence codifications of educational practice and efforts to guide teachers.

The views of practices we have characterized--as Technologies, Arts, and Crafts--are not intended as clearly separate entities, but rather as heuristic devices for exploring the implications of distinctions among views of education and teaching for codification of practice and guiding teachers. Moreover any practice, including education and teaching, tends to be comprised of different aspects, which may be viewed variously as Technologies, Crafts, and Arts. We have characterized and illustrated some prevalent and somewhat distinct conceptions of education and teaching in order to highlight the influence of different assumptions about practices or aspects of practices. What are the implications of the distinctions among views of practices for codification of educational practice and teaching and guiding teachers? How can authors and readers of guides for practice identify these critical assumptions about practices? How can authors and readers of guides for practice choose and recognize, respectively, vehicles of expression and codification appropriate to the different assumptions? How can authors and readers of guides for practice assess the potential impact of the guides with respect to the likelihood of conveying reproducible understandings? We will draw together the various threads of this paper to address these questions.

When practices or aspects of practices are viewed as Technologies, they tend to be viewed as established practices, aimed toward envisaged or familiar types of results, utilized strictly and in accordance with prescription, in definitely classifiable circumstances. They require a substantial component of "technical" knowledge which is susceptible of precise formulation; and they can be formulated in "complete" sets of "rules" that guarantee success if fol-

lowed. Thus, educators who view teaching or aspects of teaching as Technologies tend to believe that in principle replicable means can be designed to achieve specified educational goals. These methods are subject to precise formulation in categorized descriptions, focusing on observable, verbal teacher and student interactions, using literal, conventional terms and in straightforward "cook-book" type guidelines. Most potential practitioners can learn to use the methods and achieve the goals towards which they are directed. Thus, when practices or aspects of practices are viewed as Technologies, authors and readers of guides for practice can have high expectations for conveying reproducible understandings and for the generalizability of recommended practices in suitable circumstances.

By contrast, when practices or aspects of practices are viewed as Arts, they tend to be viewed as essentially idiosyncratic, private practice; aimed toward relatively novel results; utilized uniquely in consequence of predominant reliance on insight; in circumstances ranging from the expected and classified down to the minimal circumstances that would allow their use. They require substantial components of "practical" knowledge, utilized in the service of invention. The "rules" that can be formulated for them are "incomplete rules" which suggest how to avoid failure and maximize the likelihood of success, but do not assure success. Thus, educators who view teaching or aspects of teaching as Arts tend to believe that, in principle, effective teaching is characterized by demonstration of attitudes, relationships, and competencies that are essentially idiosyncratic in nature and difficult, if not impossible to define in any precise manner. Moreover, the type of learning and outcomes they view as important cannot be defined in any precise manner, nor is it possible to specify any precise, efficient methods for achieving these outcomes. These practices tend to be formulated in persuasive examples of concepts and terms and described in evocative narrative accounts, using figurative language, vivid imagery, and rhetorical devices designed to capture the mood and atmosphere of recommended educational milieus. Therefore, authors and readers of guides for these practices should not have high expectations for conveying reproducible understandings through written guides, nor is it warranted to expect widespread generalizability of recommended practices in suitable circumstances. The reasons are that these practices and the outcomes toward which they are directed cannot be codified in any precise manner and they require idiosyncratic knowledge, skills, and insight for their conduct. It would not be appropriate to assume that most

potential practitioners possess these special talents.

When practices or aspects of practices are viewed as Crafts, they tend to be viewed as established practice, modified by idiosyncratic technique; aimed toward indefinite results, accepted as such in terms of desirability; utilized loosely, variably, with a discretionary relationship to prescription; in circumstances ranging from the expected and classified down to the minimal circumstances that would allow the method. They require significant components of both "technical" knowledge, which is subject to precise codification, and "practical" knowledge, which "exists only in use . . . in a customary or traditional way of doing things" (Oakeshott, 1962, p. 13). The "rules" or guidelines which can be formulated for Crafts are "incomplete"; they suggest how to avoid failure and maximize the likelihood of success, but do not assure success. Thus, educators who view teaching or aspects of teaching as Crafts tend to believe that principles and methods can be precisely formulated for achieving codified outcomes. However, learning outcomes cannot be precisely specified, since their exact form and manifestations will depend on each student's potential, a potential which can be estimated, but not precisely defined or predicted. Moreover, teachers must adapt methods to the unique aspects of their teaching situations. These methods tend to be formulated in behavioral examples which are used to illustrate general guidelines. Authors and readers of guides for these practices can have fairly high expectations for conveying reproducible understandings, since the practices can be codified in straightforward guidelines, in literal, conventional language, with the use of behavioral examples as illustrations. However, it is less warranted to assume the generalizability of recommended practices in suitable circumstances, since these practices require a significant component of "practical knowledge" for their conduct and the development of "knacks" and "tactics" for effective practice.

In this paper, we characterized and illustrated somewhat distinct conceptions of practices to highlight the consequences of the different views for codifying educational practice and teaching and guiding teachers. However, educational practice and teaching are very complex practices and do not easily yield to any stereotyped views; in fact, typically different aspects of educational practice and teaching can be viewed appropriately and variously as Technologies, Arts, and Crafts. As Eisner argues, "the study of education needs . . . a variety of new assumptions and methods that will help us to appreciate the richness of educational practice, that will be useful for revealing the

subtleties of its consequences for all to see" (Eisner, 1979, p. 19). He asks, "In what sense is teaching an art? . . . What aspects of teaching can be routinized and what aspects require ingenuity and inventiveness, . . ." (*Ibid.*, p. 18).

Thus, the purpose of the paper has not been to prescribe any particular forms of communication for guiding teachers, but rather to demonstrate how different and appropriate conceptions of education and teaching tend to be associated with: different forms of communication for guiding practice; different expectations of written communications for conveying reproducible understandings; and different expectations about the generalizability of recommended practices. The theoretical framework, analytical tools, and examples are intended to help authors of guiding communications select vehicles of expression--media, foci, and terms--appropriate to their conceptions of education, teaching, and the specific practices they seek to codify, and to have more accurate expectations about the potential impact of their efforts. The analysis is also intended to help teachers read guiding communications with greater acumen and understanding of implications for their practice. Finally, our analysis provides an example of what might be entailed in exploring the consequences and implications of appropriate, but different views of educational practice and teaching.

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